

ABSTRACT

5 An automated model componentization feature systematically converts duplicate
or otherwise amenable patterns in a model into references. Multiple references are
simplified to one unit that contains the otherwise duplicated functionality. Duplicated
or selected functionality is identified based on a number of arguments that may be user
supplied. These arguments include the level of polymorphism (i.e., which of the sample
10 times, dimensions, and data types can be propagated in) but also the maximum size of
the patterns to look for to address the general trade-off of generating few partitions with
many blocks or many partitions with few blocks and which modeling constructs are used
(e.g., whether Go To/From connections such as in Simulink® are present). Model
conversions can result in potentially disjoint partitions.

15